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*X. An Account of the Meteors of the 18th of August and 4th of October, 1783. By Alex. Aubert, Esq. F. R. S. and S. A.*

Read Jan. 15, 1784.

**H**AVING been fortunate enough to see both the Meteors, of the 18th of August and of the 4th of October last, I think it my duty to communicate the observations I made upon them to the Royal Society. We are in general so little acquainted with these phænomena, that too many accounts of them cannot be collected, in order to enable us to form some idea of their nature, path, magnitude, and distance from the earth. It is not to be expected, that an observer, in the open air, to whom the appearance comes totally unexpected, can give a perfect account of it; but by going afterwards to the spot from which he saw it, he may, by the assistance of the objects about him, and some proper instruments, come near the truth: I have followed this method; and it is the result thence deduced I have the honour of communicating to the Society.

Monday the 18th of August had been a very fultry day. At the time the meteor made its appearance, although the stars were bright in the upper part of the heavens, the horizon was surrounded with a haziness which did not permit any stars to be seen under an altitude of about eight degrees. I was on horseback, returning to my Observatory at Loampit-hill, near Deptford, in Kent; my face was turned towards the South  
West,



West. I was at the foot of Lewisham-bridge, when I was much surpris'd at perceiving suddenly a kind of glimmering light, resembling faint but quickly repeated flashes of lightning; soon after which the light increased much towards the North West; I turned directly to it, and saw it form into a large luminous body like electrical fire, with a tinge of blue round its edges. It rose from the hazy part of the atmosphere (which I have observed might be about  $8^{\circ}$  high), and moved at first almost in a vertical direction, changing its size and figure continually, having to me all the appearances of successive inflammation, and not of a solid body; it was sometimes round, at others oval and oblong, with its longest diameter in the line of its motion; although it had got high enough to be quite out of the hazy part of the horizon, it was surrounded and accompanied in its whole course with a kind of whitish mist or light vapour. The place from which it rose was about  $38^{\circ}$  from the north towards the west. After rising a little way perpendicularly, it made its progress in a curve, so as to be at the highest when it had reached due east, at an altitude of about  $35^{\circ}$ ; after which, continuing a few degrees beyond the east, and being about  $30^{\circ}$  high, it left behind it several globules of various shapes; the first which detached itself being very small, and the others gradually larger and larger, until the last was nearly as large as the remaining preceding body; soon afterwards they all extinguished gradually, like the bright stars of a sky-rocket, with some inclination downwards, which appearance might probably arise from the upper parts of the separate bodies extinguishing before the lower ones. The meteor was at the brightest and at the largest just before its separation; I estimated its magnitude or area then to be equivalent to two full moons. Its light, during its whole course, was so great,

that I could see every object distinctly, and when it was extinguished the night appeared very dark : I could however see by my watch that it was seventeen minutes after nine : as soon as I got to my observatory, which might be about ten minutes afterwards, having compared it with my regulator, I found it about half a minute too slow for mean time. I think the whole appearance of the meteor, from its first rising out of the hazy part of the atmosphere to its total extinction, did not exceed ten or twelve seconds of time, during which it moved a space corresponding to about  $136^{\circ}$  in azimuth. I recollect an appearance during its motion, which confirms me in the idea I had of its not being a solid body. In its progress it did not describe a curve as regular as might have been expected from such a body ; but seemed to move in somewhat of a waving line. This irregularity in its course was probably owing to changes of its figure and size, occasioned by the train of inflammation not running in an even line. I should also mention that the meteor appeared extremely near to me, more particularly when it was at the highest ; yet from the comparisons made already of observations at several distant places, we may reasonably judge, that it could not be at less than 40 or 50 miles distance from the surface of the earth.

The meteor of Saturday the 4th of October last was of a much shorter duration and path. I was on horseback, near the stones end, in Blackman-Street, Southwark ; my face was turned northward. I saw, towards the N. N. E. a train of fire, resembling in its motion a common meteor, vulgarly called a falling star, but the colour of it was red ; it originated at an altitude of about  $25^{\circ}$  ; and moved quickly in a straight line eastward, inclining gradually towards the horizon, so as to be, after a course of  $15^{\circ}$  or  $20^{\circ}$  in azimuth, about  $15^{\circ}$  above the horizon,

horizon, when it spread into a broader train, and growing of a lighter colour, it terminated by resolving itself into a beautiful oblong body of the brightest fire, like electrical fire tinged blue, almost as large as the moon; it illuminated the street and houses much more than any lightning I have seen; those who had not a direct view of it, took it for a long flash of lightning. I think its whole course did not exceed  $25^{\circ}$ , nor the time of its appearance two or three seconds. It extinguished quickly, and left behind it, in its path, a train of very dull reddish fire, which continued visible to my naked eye above one minute and a half. The time of night was forty-three minutes past six; it was a fine star-light evening, warmer than the preceding ones; the moon beyond the first quarter, and very bright; yet her light was not to be compared to the much greater light of the meteor.

I do not recollect hearing any noise or report, either during or after the appearance of these meteors.

London,  
Nov. 6, 1783.

ALEXANDER AUBERT.

Since I wrote the above account, I have reason to think I have estimated the altitude of the last meteor rather too low; some of my friends in London, who had, at the time of its appearance, a very good object of comparison for its altitude, make it nearer 30 than 20 degrees.

